NOTICE

All drawings located at the end of the document.

DRAFT ENVIRONMENTAL RESTORATION
RFCA STANDARD OPERATING PROTOCOL
FOR ROUTINE SOIL REMEDIATION
FY02 NOTIFICATION #02-08
IHSS GROUP 000-1
SOLAR EVAPORATION POND
AREA OF CONCERN

June 2002

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ACRONYMS

AL	action level
AOC	area of concern
D&D	Decontamination and Decommissioning
cy	cubic yard
EDDIE	Environmental Data Dynamic Information Exchange
ER	Environmental Restoration
ER RSOP	Environmental Restoration RSOP for Routine Soil Remediation
FY	Fiscal Year
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
ITS	Interceptor Trench System
LLMW	low level mixed waste
mg/kg	milligram per kilogram
NPWL	New Process Waste Lines
OPWL	Original Process Waste Lines
PAC	Potential Area of Concern
PCB	polychlorinated biphenyl
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
POC	Point of Compliance
POE	Point of Evaluation
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RISS	Remediation, Industrial D&D, and Site Services
RSOP	RFCA Standard Operating Protocol
SCO	surface contaminated object
SEP	Solar Evaporation Ponds
SVOC	semivolatile organic compound
UBC	Under Building Contamination
VOC	volatile organic compound

1.0 INTRODUCTION

This Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002a) Fiscal Year (FY)02 Notification includes the notification to remediate Individual Hazardous Substance Sites (IHSSs), Potential Areas of Concern (PACs), and Under Building Contamination (UBC) Sites at the Rocky Flats Environmental Technology Site (RFETS) Industrial Area (IA) during FY02. The purpose of this Notification is to invoke the ER RSOP for IHSS Group 000-1 Solar Evaporation Pond (SEP) Area of Concern (AOC). Activities specified in the ER RSOP are not reiterated here; however deviations from the ER RSOP are noted where appropriate.

Soil with contaminant concentrations greater than RFCA Tier I Action Levels (ALs) and associated debris will be removed in accordance with RFCA and the ER RSOP. Soil with contaminant concentrations less than RFCA Tier I ALs will be evaluated for additional removal through the consultative process using stewardship and ALARA considerations (Section 5.4 and 5.5 of the ER RSOP).

Proposed remediation sites covered under ER RSOP Notification #02-08 are listed in Table 1 and their locations are shown on Figure 1.

Table 1
FY02 Potential Remediation Areas

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Estimated Remediation Volume
000-1	Solar Evaporation Ponds – Area of Concern	Radionuclides Metals SVOCs	Surface and Subsurface Soil	Approximately <1 cy
	PAC 900-1310 – Interceptor Trench System Water Spill	Radionuclides Metals Nitrates	Surface Soil	<1 cy
	OPWL Valve Vault West of Pond 207A	Radionuclides Metals Nitrates	Subsurface Soil Concrete	<1 cy <10 cy
	RCRA Unit 21 and 48 - B788 concrete slab, 788A, clarifier slabs, B308A slab	Radionuclides Metals	Concrete Surface Soil	40 cy low level mixed water (LLMW) 350 cy (Recycled) <1 cy
	Collection Sumps	Radionuclides Metals Nitrates	Surface contaminated object (SCO) debris	<1 cy
	Pond 207B and 207C Leak Detection Drains	Radionuclides Metals Nitrates	SCO debris	<1 cy
	910/374 Above Ground Pipeline	Radionuclides Metals Nitrates	Pipeline	50 ft^3
	Modular Storage Tank (MST) Return Line to 910 Facility	Radionuclides Metals Nitrates	Pipeline	<1 cy

2.0 IHSS GROUP 000-1

IHSS Group 000-1 Solar Evaporation Pond (SEP) Area of Concern (AOC) includes PAC 900-1310 – Interceptor Trench System Water Spill, the OPWL valve vault west of Pond 207A, RCRA Unit 21 and 48 – Building 788 Permacon, clarifer, B308A concrete slabs, leak detection drains, collection sumps, and the 904/374 above ground pipeline. The locations of these components within the SEP AOC are shown on Figure 2.

2.1 Potential Contaminants of Concern

Potential contaminants of concern (PCOCs) at IHSS Group 000-1 were determined based on process knowledge and data collected during previous studies (DOE 1992-2001, DOE 1995a, DOE 1995b, DOE 1999a, DOE 1999b, DOE 2001, DOE 2000).

2.2 Project Conditions

The following conditions are present at this site:

- RCRA Units 21 and 48 concrete slabs;
- An OPWL valve vault west of Pond 207A;
- PAC 900-1310;
- Original Process Waste Lines;
- Pond 207B and 207C leak detection drains;
- Collection sumps;
- The 910/374 above ground pipeline;
- MST return line via 308A Pumphouse to B910.

2.3 Remediation Plan

This RSOP Notification remediation plan for IHSS Group 000-1 SEP AOC includes the following objectives:

- Remove the RCRA Units 21 and 48 concrete slabs and recycle in accordance with the RSOP for Recycling Concrete (DOE 1999c), or dispose of;
- Remove soil with contaminant concentrations greater than RFCA Tier I ALs associated with RCRA Units 21 and 48;
- Remove the OPWL valve vault and associated soil with contaminant concentrations greater than RFCA Tier I ALs;

- Remove soil with contaminant concentrations greater than RFCA Tier I ALs at PAC 900-1310 (Figure 2);
- Remove soil hot spots as agreed to through the consultative process;
- Remove OPWL at the edges of the SEP berms and disrupt potential pathways;
- Disrupt MST return line via 308A Pumphouse to B910;
- Disrupt 207B and 207C Pond leak detection drains;
- Remove collection sumps;
- Remove above ground 910/374 pipeline; and
- Collect confirmation samples in accordance with the Industrial Area Sampling and Analysis Plan (IASAP) (DOE 2001).

It is anticipated that after remediation there will be areas with concentrations of metals, radionuclides, and organics greater than background plus two standard deviations or method detection limits, but below RFCA Tier II ALs, at this site. Additionally, it is anticipated that there will be very few areas with concentrations above RFCA Tier II ALs.

2.4 Stewardship Evaluation

The remediation decision for the SEP AOC will be described in a Proposed Action Memorandum. Because this notification only includes several small discrete sites within the SEP AOC, the stewardship considerations for these sites cannot be separated from the larger SEP AOC stewardship considerations. It is unlikely that additional remediation of these small sites will impact the overall stewardship considerations for the SEP AOC. Therefore, consistent with the methodology described in the ER RSOP (Section 5.4) the stewardship evaluation for these sites will be conducted as part of the PAM.

2.5 Accelerated Action Remediation Goals

ER RSOP remedial action objectives include the following:

1. Provide a remedy consistent with the RFETS goal of protection of human health and the environment;
2. Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls; and
3. Minimize the spread of contaminants during implementation of accelerated actions.

The accelerated action remediation goals for IHSS Group 000-1 SEP AOC include the following:

- Remove the RCRA Units 21 and 48 concrete slabs and recycle in accordance with the RSOP for Recycling Concrete (DOE 1999c), or dispose of;
- Remove soil with contaminant concentrations greater than RFCA Tier I ALs associated with RCRA Units 21 and 48;
- Remove the OPWL valve vault and associated soil with contaminant concentrations greater than RFCA Tier I ALs;
- Remove soil with contaminant concentrations greater than RFCA Tier I ALs at PAC 900-1310;
- Remove soil hot spots as agreed to through the consultative process;
- Remove OPWL at the edges of the SEP berms and disrupt potential pathways;
- Disrupt MST return line via 308A Pumphouse to B910;
- Disrupt 207B and 207C Pond leak detection drains;
- Remove collection sumps; and
- Remove above ground 910/374 pipeline.

2.6 Treatment

Not applicable.

2.7 Project-Specific Monitoring

Project-specific surface water, groundwater, and air monitoring during remediation was planned through the IMP process. Additional air monitoring will be conducted in accordance with Work Controls.

2.8 Resource Conservation and Recovery Act Units and Intended Waste Disposition

Resource Conservation and Recovery Act (RCRA) Unit 21 (Permacon) was a permitted storage unit located in the former Building 788. RCRA Unit 48 was an interim status unit consisting of pondcrete solidification process equipment, including the clarifier and the pump transfer station at Building 308A.

Partial closure was declared for all of Building 788 (Unit 21) concrete slab except for the area of the former Permacon. A majority of Building 788 was determined to be clean closed (4,530 ft^2) with an approximate 470 ft^2 representing the Permacon area rendered

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RCRA stable by decontamination using chemical cleaning and high pressure spray methods prior to collection of water samples.

Partial closure for the pondcrete processing system - RCRA Unit 48, (Figure 2) was declared for all the former components of the unit except for the 207 clarifier slab (900 ft^2) and the 308A pumphouse slab (120 ft^2). The 207 Clarifier slab was rendered RCRA stable by the application of an acrylic latex spray-on fixative. The B308A pumphouse slab was rendered RCRA stable by chemical cleaning and high-pressure spray methods employed for decontamination prior to collection of water samples. (DOE 1999a)

It is anticipated that waste from these units will be classified as low level mixed waste.

2.9 Administrative Record Documents

DOE, 1992–2001, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado.

DOE, 1995, OU 4 Solar Evaporation Ponds Interim Measure / Interim Remedial Action Environmental Assessment Decision Document, Parts I through V, Rocky Flats Environmental Technology Site, Golden, Colorado, February.

DOE, 1995, Solar Evaporation Pond 207 C Characterization Report for the Rocky Flats Environmental Technology Site, Golden, Colorado, December.

DOE, 1999 Final Closeout Report Building 788 & Clarifier Tank RCRA Closure Decommissioning Project, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

DOE, 1999, Final Solar Ponds Plume Decision Document, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, 1999, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, 2002, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January.

DOE, 2002, Draft Solar Ponds Plume Decision Document Modification, Rocky Flats Environmental Technology Site, Golden, Colorado, April.

2.10 Projected Schedule

Remediation of IHSS Group 000-1 SEP AOC will begin in the fourth quarter of FY02.

3.0 PUBLIC PARTICIPATION

ER RSOP Notification #02-08 activities were discussed at the June 2002 ER/D&D Status meeting. This Notification is available at the Rocky Flats Reading Rooms and on the Environmental Data Dynamic Information Exchange (EDDIE) website at www.rfets.gov.

4.0 REFERENCES

DOE, 1992 - 2001, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado.

DOE, 1995a, OU 4 Solar Evaporation Ponds Interim Measure / Interim Remedial Action Environmental Assessment Decision Document, Parts I through V, Rocky Flats Environmental Technology Site, Golden, Colorado, February.

DOE, 1995b, Solar Evaporation Pond 207 C Characterization Report for the Rocky Flats Environmental Technology Site, Golden, Colorado, December.

DOE, 1999a, Final Closeout Report Building 788 & Clarifier Tank RCRA Closure Decommissioning Project, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

DOE, 1999b, Final Solar Ponds Plume Decision Document, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, 1999c, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

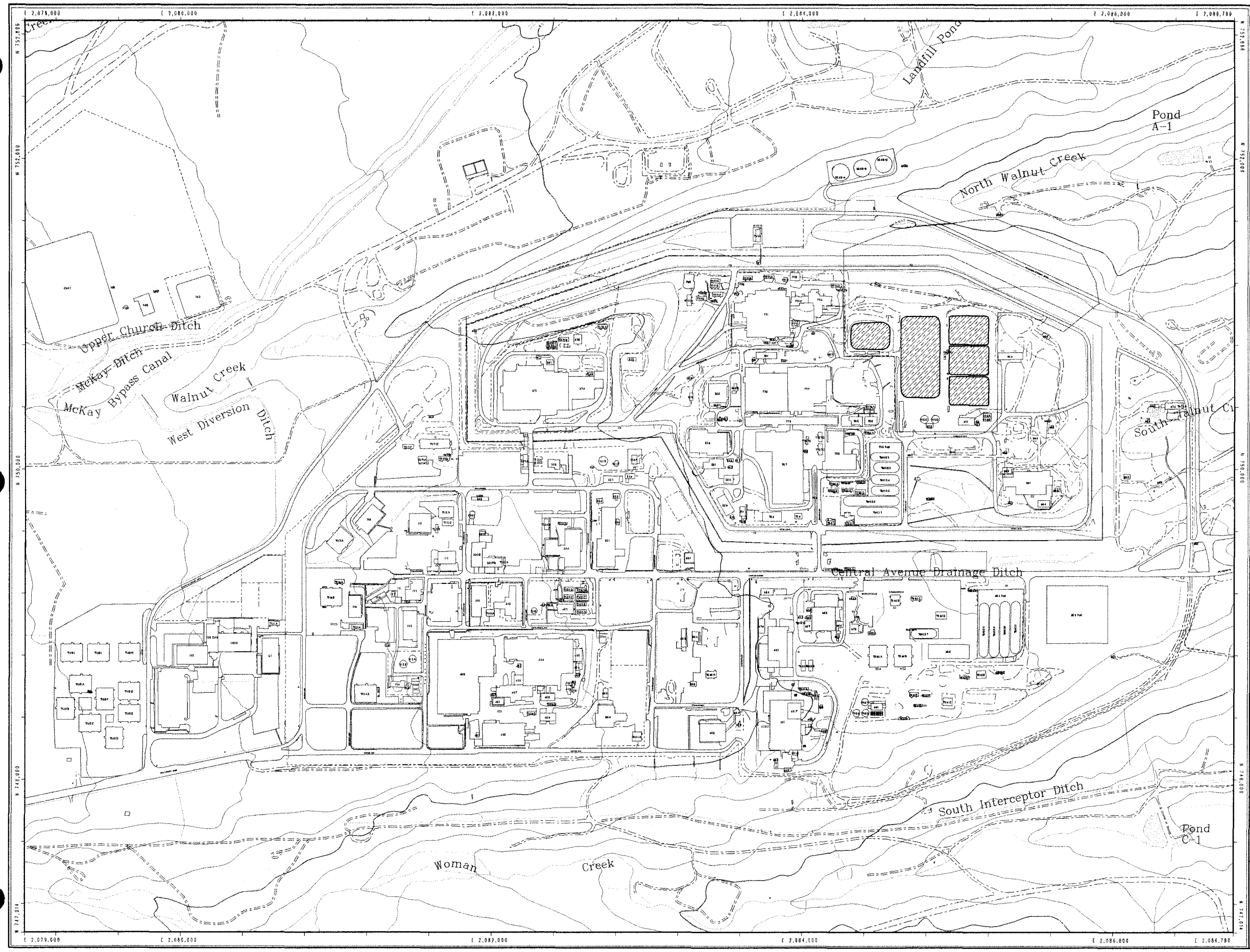
DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, 2002a, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January.

DOE, 2002b, Draft Solar Ponds Plume Decision Document Modification, Rocky Flats Environmental Technology Site, Golden, Colorado, April.

Figure 1
IA Groups Location Map



EXPLANATION

- Solar Evaporation Pond Area of Concern

Standard Map Features

- Buildings and other structures
- Solar Evaporation Ponds (SEPs)
- Lakes and ponds
- Streams, ditches, or other drainage features
- *Fences and other barriers*
- Topographic Contour (20-Foot)
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSI., Las Vegas. Digitized from the orthophotographs. 1/95

Topographic contours were derived from digital elevation model (DEM) data by Morrison Knudson (MK), using ESRI Arc TIN and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Flyover, at ~ 10 meter resolution. DEM post-processing performed by MK, Winter 1997.

Scale = 1 : 7580
1 inch represents approximately 632 feet

250 0 500 1000ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

DRAFT

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NT_Svr w:/projects/fy2002/02-0699/ou4_sep.aml

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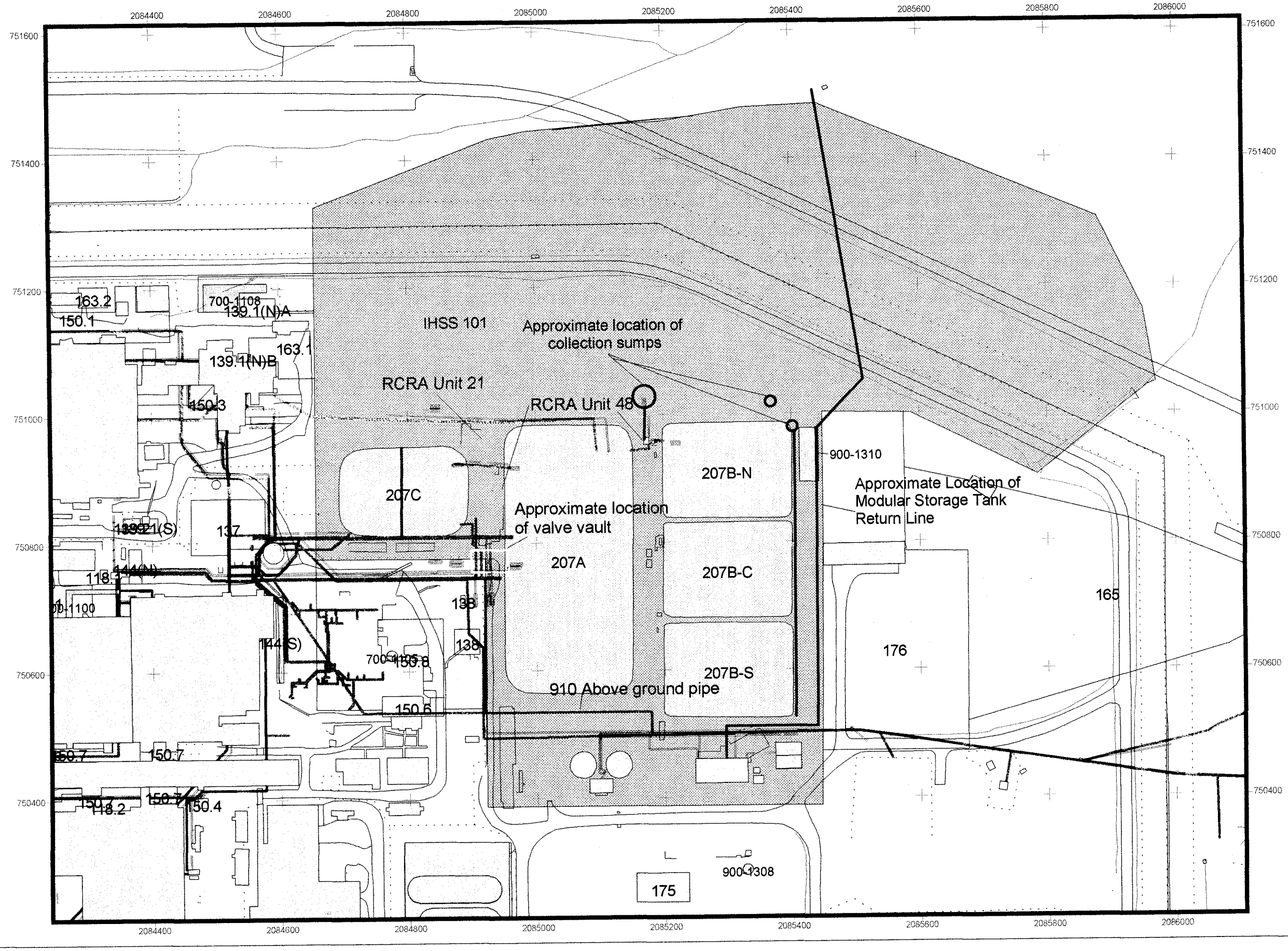
Figure 2
Solar Evaporation Ponds Area of Concern



KEY

- OU4 AOC
- SEP
- IHSS
- PAC
- Building or other structure
- OPWL
- NPWL
- Storm drain
- Drain
- MST Return Line
- Stream, ditch, or other drainage
- Paved area
- Fence
- Dirt Road

N

Scale = 1:1,700

40 0 40 80 120 160 Feet

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

KAISER•HILL COMPANY

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